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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,687	03/09/2001	David T. Scadden	0492479-0018	7008

7590

07/08/2003

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EXAMINER

KATCHEVES, KONSTANTINA T

ART UNIT

PAPER NUMBER

1636

10

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/803,687

Applicant(s)

SCADDEN ET AL.

Examiner

Konstantina Katcheves

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) 46-74 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claims 1-74 are pending in the present application.

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-45 in Paper No. 8 is acknowledged. Claims 46-74 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8. Accordingly, claims 1-45 are under examination.

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. See e.g. Specification, page 11. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Sequence Compliance

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. For example, pages 24 and 32 recite sequences for which there are no SEQ ID NO listed nor is there

any computer readable form or paper copy of these sequences. Applicant must comply with the requirements of the sequence rules (37 CFR §§ 1.821 - 1.825) before the application can be examined under 35 U.S.C. §§ 131 and 132.

A complete reply to the instant action requires Applicant to fully comply with the sequence rules. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR § 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 30-32 and 36-42 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakanishi et al. (PNAS Vol.92 1995).

Nakanishi et al. teach the expression of antisense p21 RNA in G₀ arrested cells which resulted in DNA synthesis and entry of cells into mitosis. Thus, the cells of Nakanishi et al. proliferate in response to increase in the amount of p21^{Sdi1} RNA and protein. See page 4352 and 4354. Nakanishi et al. also teach the cell population of the claims in a balanced salt solution.

Claims 1, 2, 30-32 and 36-42 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Waldman et al. (Cancer Research Vol. 55 1995).

Waldman et al. teach a method wherein clones comprising a homozygous deletion of p21 resulted in the abrogation of the G₁ cell cycle checkpoint such that all cells passed through S phase and resulted in the growth and proliferation of the cells. See abstract and page 5189.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21, 27 and 30-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. as applied to claims 1, 2, 3, 30-32 and 36-42 and 45 above, and further in view of Rivard et al. (Journal of Biological Chemistry vol.271 1996).

Nakanishi et al. teach the expression of antisense p21 RNA in G₀ arrested cells, which resulted in DNA synthesis and entry of cells into mitosis. Thus, the cells of Nakanishi et al. proliferate in response to increase in the amount of p21^{Sdi1} RNA and protein. See page 4352 and 4354. Nakanishi et al. fail to teach the disruption of both p21 and p27 in order to facilitate the proliferation of cells.

Rivard et al. teach the enforced expression of p27 in cells causes G₁ arrest. Rivard et al. specificlly reduced expression of p27 using an antisense construct which resulted in DNA synthesis initiation and the growth and proliferation of cells. See page 18337 and page 18340.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Nakanishi et al. and Rivard et al. to proliferate cells by disrupting both p21 and p27 in a cell population. One of ordinary skill in the art would have been motivated to combine Nakanishi et al. and Rivard et al. because the references teach p21 and p27 inhibit Cdk activity in a cell and since both references teach that inhibition of each gene results in DNA proliferation and abrogation of cell quiescence, one of skill in the art would reasonably expect to prevent cell quiescence and promote cell proliferation by inhibiting both p21 and p27. Moreover, techniques of cell culture and proliferation are germane in the art such that the ordinary skilled artisan would be motivated to proliferate many different cell types including stem and progenitor cells. Thus, the invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3-6 and 22-29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The written description requirement is established by 35 U.S.C. 112, first paragraph which states that the: "*specification* shall contain a written description of the invention. .

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[emphasis added].” The written description requirement has been well established and characterized in the case law. A specification must convey to one of skill in the art that “as of the filing date sought, [the inventor] was in possession of the invention.” See *Vas Cath v. Mahurkar* 935 F.2d 1555, 1560 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). Applicant may show that he is in “possession” of the invention claimed by describing the invention with all of its claimed limitations “by such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.” See *Lockwood v. American Airlines Inc.* 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

The present claims are drawn to agents which inhibit p21 activity and p21 and p27 activity. These are genus claims that encompass a wide array of molecules. The agents of the present claims could be anything from a chemical compound or composition to an antisense molecule to a protein. The specification does not disclose these agents, their structures or how the structures of these agents relate to their function. Thus, the specification does not describe the complete structure of a representative number of species. Neither does the specification describe a representative number of species in terms of partial structure and relevant identifying characteristics. Absent of such teachings and guidance as to the structure-function relationship of these molecules, the specification does not describe the claimed agents in such full, clear, concise and exact terms so as to indicate that Applicant had possession of these molecules at the time of filing of the present application. Thus, the written description requirement has not been satisfied.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The present claims recite the terminology, "less than wild-type p21 activity" and "less than wild-type p27 activity." These genes are differentially in cells depending on mitogen activation or activation by cell damage for instance. Therefore, the level of expression from which "wild type activity" is determined is unclear.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Konstantina Katcheves whose telephone number is (703) 305-1999. The examiner can normally be reached on Monday through Friday 7:30 to 4:30.

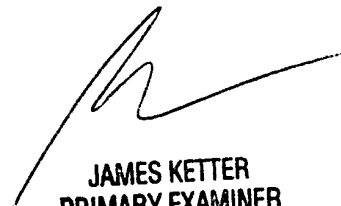
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Remy Yucel, Ph.D. can be reached on (703) 305-1998. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-7939 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3388.

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Konstantina Katcheves
June 16, 2003



JAMES KETTER
PRIMARY EXAMINER